

REMARKS

In the Office Action of February 13, 2006, claims 15-20 were rejected under 35 U.S.C. 112, second paragraph, due to insufficient antecedent basis for the phrase "*said focusing means*" in claim 15. Furthermore, claims 1-20 were rejected under 35 U.S.C. 103(a) as being unpatentable over EP 1 329 999 A1 ("Wolf et al.") in view of U.S. Patent No. 5,161,059 ("Swanson et al.").

In response, Applicant has canceled claim 20, and added claim 21. With respect to the 112 rejection of claims 15-19, Applicant has amended claim 15 by replacing the phrase "*said focusing means*" with the phrase "*aberration-corrected diffractive optical element*," which has sufficient antecedent basis. With respect to the 103(a) rejection of claims 1-19, Applicant respectfully asserts that the Examiner has failed to establish a *prima facie* case of obviousness for the claimed invention. In particular, the Examiner has not provided a valid suggestion or motivation to combine the teachings of Wolf et al. and Swanson et al. in the manner suggested by the Examiner. In view of the claim amendments and the following remarks, Applicant respectfully requests that the pending claims 1-19 and 21 be allowed.

A. Patentability of Independent Claims 1, 10 and 15

The Office Action has rejected the independent claims 1, 10 and 15 under 35 U.S.C. 103(a) as being unpatentable over Wolf et al. in view of Swanson et al. The Office Action has correctly stated on page 3 that the cited reference of Wolf et al. does not disclose that a diffractive optical element (DOE) 40 of a wavelength tunable laser resonator 1 is aberration corrected. The Office Action has also correctly stated that the cited reference of Swanson et al. discloses a diffractive optical element adapted to correct for spherical aberrations. However, the Office Action has erroneously asserted that "[i]t would have been obvious to one skilled in the art to use Swanson's DOE in the '999 system so that spherical aberrations may be corrected, as these aberrations are a known problem affecting performance."

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references

themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

In the case at hand, the only "suggestion or motivation" provided by the Examiner to combine the teachings of Wolf et al. and Swanson et al. is that "these [spherical] aberrations are a known problem affecting performance." This assertion assumes that it was known that the diffractive optical element in the wavelength tunable laser resonator of Wolf et al. had spherical aberrations, which affected the performance of the resonator. However, this performance problem due to spherical aberrations of the diffractive optical element is not mentioned in the cited reference of Wolf et al. The cited reference of Swanson et al. does disclose in column 7, lines 40-41, that the diffractive optical element adapted to correct for spherical aberrations is useful in semiconductor UV lithographic systems. However, the cited reference of Swanson et al. does not disclose or suggest that spherical aberrations are a known problem in a wavelength tunable laser resonator, such as the resonator of Swanson et al. Thus, the suggestion to modify the resonator of Wolf et al. with the diffractive optical element of Swanson et al., as alleged by the Examiner, is not found in the cited prior art references.

With the rejection of claims 1, 10 and 15, the Office Action has failed to provide the requisite factual basis and failed to establish the requisite motivation to support the conclusion that it would have been obvious to one of ordinary skill in the art to use the diffractive optical element of Swanson et al. in the resonator of Wolf et al., as suggested by the Examiner. The Examiner is requested to cite art supporting his assertions. Alternatively, if the Examiner is aware of facts within his personal knowledge that provide the requisite factual basis and establishes the requisite motivation to support his conclusion, the Examiner is requested to provide an affidavit in accordance with 37 C.F.R. § 1.104(d)(2). Otherwise, Applicant respectfully requests that the independent claims 1, 10 and 15 be allowed.

B. Patentability of Dependent Claims 2-9, 11-14, 16-19 and 21

Each of the dependent claims 2-9, 11-14, 16-19 and 21 depends on one of the independent claims 1, 10 and 15. As such, these dependent claims include all the limitations of their respective base claims. Therefore, Applicant submits that these dependent claims are allowable for at least the same reasons as their respective base claims.

As an example, the dependent claim 21 recites the limitation of "*wherein said aberration-corrected focusing diffractive optical element is configured as a Fresnel zone plate or a kinoform.*" The cited reference of Wolf et al. does not disclose an "*aberration-corrected focusing diffractive optical element,*" as recited in claim 21. The cited reference of Swanson et al. does disclose a diffractive optical element adapted to correct for spherical aberrations. However, this diffractive optical element is not a Fresnel zone plate or a kinoform, but rather a spherical lens with a diffractive profile etched into a surface of the spherical lens, as described in column 6, lines 36-40, of Swanson et al. Thus, the dependent claim 21 cannot be anticipated or rendered obvious in view of the cited references of Wolf et al. and Swanson et al.

Applicant respectfully requests reconsideration of the claims in view of the remarks made herein. A notice of allowance is earnestly solicited.

Respectfully submitted,

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